

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Original) A transmitting device, comprising:

a continuous pulse generating unit that continuously generates a plurality of impulse waveforms at arbitrary time intervals but shorter than a pulse string repetition cycle;

a modulating unit that modulates a continuous pulse generated by the continuous pulse generating unit, using transmission data; and

an output unit that outputs a pulse modulated by the modulating unit.

2. (Original) The transmitting device as claimed in claim 1, wherein a pulse interval of a plurality of impulse waveforms generated by the continuous pulse generating unit is set shorter than a pulse width of the plurality of impulse waveforms generated by the continuous pulse generating unit.

3. (Original) The transmitting device as claimed in claim 1, wherein the continuous pulse generating unit has at least one of rising delay and falling delay in the impulse waveform generated.

4. (Original) The transmitting device as claimed in claim 1, further comprising a frequency converting unit that converts a frequency of a pulse modulated by the modulating unit, wherein

a frequency to be converted by the frequency converting unit is arbitrarily selectable; and

the output unit outputs a modulated pulse after being converted by the frequency converting unit.

5. (Original) The transmitting device as claimed in claim 1, further comprising a frequency converting unit that converts a frequency of a continuous pulse generated by the continuous pulse generating unit, wherein

a frequency to be converted by the frequency converting unit is arbitrarily selectable; and

the modulating unit modulates a continuous pulse after being converted by the frequency converting unit.

6. (Original) The transmitting device as claimed in claim 1, wherein a power level of an impulse waveform generated by the continuous pulse generating unit is arbitrarily settable.

7. (Original) The transmitting device as claimed in claim 1, wherein the continuous pulse generating unit outputs a plurality of impulse waveforms only for a specific transmission data signal.

8. (Currently Amended) A receiving device comprising:

a modulated pulse receiving unit that receives a modulated pulse transmitted from ~~a any one of the transmitting devices that outputs modulated pulses that are continuous pulses modulated using transmission data, the continuous pulses that are a plurality of impulse waveforms continuously generated at arbitrary time intervals but shorter than a pulse string repetition cycle as claimed in claim 1 through claim 7;~~ and

a demodulating unit that receives transmission data by demodulating a modulated pulse received by the modulated pulse receiving unit.

9. (Currently Amended) The A-receiving device as claimed in claim 8, comprising:

~~a modulated pulse receiving unit that receives modulated pulses that are continuous pulses modulated using transmission data and transmitted, the continuous pulses that are a plurality of impulse waveforms continuously generated~~

~~by a transmitting device at arbitrary time intervals but shorter than a pulse string repetition cycle; and~~

~~—— a demodulating unit that receives transmission data by demodulating a modulated pulse received by the modulated pulse receiving unit, wherein the demodulating unit demodulates a signal that is a group of a plurality of continuous impulse waveforms pulse-phase modulated, and wherein the receiving device judges a change in phase of a second pulse or later with reference to a first pulse.~~

10. (Currently Amended) The A-receiving device as claimed in claim 8, comprising:

~~—— a modulated pulse receiving unit that receives modulated pulses that are continuous pulses modulated using transmission data and transmitted, the continuous pulses that are a plurality of impulse waveforms continuously generated by a transmitting device at arbitrary time intervals but shorter than a pulse string repetition cycle; and~~

~~—— a demodulating unit that receives transmission data by demodulating a modulated pulse received by the modulated pulse receiving unit, wherein the demodulating unit demodulates a signal that is a group of a plurality of continuous impulse waveforms pulse-amplitude modulated, and wherein the receiving device judges a size of amplitudes of a second pulse or later with reference to a first pulse.~~

11. (Currently Amended) The A-receiving device as claimed in claim 8, comprising:

~~—— a modulated pulse receiving unit that receives modulated pulses that are continuous pulses modulated using transmission data and transmitted, the continuous pulses that are a plurality of impulse waveforms continuously generated by a transmitting device at arbitrary time intervals but shorter than a pulse string repetition cycle; and~~

~~—— a demodulating unit that receives transmission data by demodulating a modulated pulse received by the modulated pulse receiving unit, wherein the demodulating unit demodulates a signal that is a group of a plurality of continuous~~

impulse waveforms pulse-position modulated, and wherein the receiving device judges a change in position of a second pulse or later with reference to a first pulse.

12. (Original) The transmitting device as claimed in claim 1, further comprising a single pulse transmitting unit that generates a single pulse, pulse-position modulates the single pulse using the transmission data, and outputs the single pulse, wherein continuous pulses generated by the continuous pulse generating unit are a plurality of pulses with different phases continued, and wherein the modulating unit does not modulate the continuous pulses generated by the continuous pulse generating unit but inputs to the output unit.

13. (Original) The transmitting device as claimed in claim 12, wherein both a pulse-position modulated signal supplied from the single pulse transmitting unit and the continuous pulses are changed in position as appropriate for same arbitrary time.

14. (Currently Amended) The A-receiving device as claimed in claim 8, wherein the continuous pulses are a plurality of pulses with different phases continued, and wherein the receiving device that receives a signal transmitted from the transmitting device that outputs the continuous pulses without being modulated and outputs single pulses that have been pulse-position modulated using the transmission data as claimed in one of claim 12 and claim 13, further comprising:

a two-signal receiving unit that receives a pulse-position modulated signal supplied from the single pulse transmitting unit and the continuous ~~signal-pulses~~; and

a correlation judgment unit that judges information by converting a correlation signal to signals with different phases, positive and negative, according to a pulse position, by multiplying the two signals received by the two-signal receiving unit.

15. (Currently Amended) A communication system comprising:

~~the~~ a transmitting device including;

a continuous pulse generating unit that continuously generates a plurality of

impulse waveforms at arbitrary time intervals but shorter than a pulse string repetition cycle;

_____ a modulating unit that modulates a continuous pulse generated by the continuous pulse generating unit, using transmission data; and

_____ an output unit that outputs a pulse modulated by the modulating unit as claimed in any one of claim 1 through claim 7; and

thea receiving device including;

_____ a modulated pulse receiving unit that receives a modulated pulse transmitted from the transmitting device; and

_____ a demodulating unit that receives transmission data by demodulating a modulated pulse received by the modulated pulse receiving unit as claimed in any one of claim 8 through claim 11.

16. (Currently Amended) A communication system comprising:

thea transmitting device including;

_____ a continuous pulse generating unit that continuously generates a plurality of impulse waveforms at arbitrary time intervals but shorter than a pulse string repetition cycle;

_____ an output unit that outputs the continuous pulse; and

_____ a single pulse transmitting unit that generates a single pulse, pulse-position modulates the single pulse using the transmission data, and outputs the single pulse as claimed in any one of claim 12 and claim 13; and

thea receiving device that receives a signal transmitted from the transmitting device, including:

_____ a two-signal receiving unit that receives a pulse-position modulated signal supplied from the single pulse transmitting unit and the continuous pulses; and

_____ a correlation judgment unit that judges information by converting a correlation signal to signals with different phases, positive and negative, according to a pulse position, by multiplying the two signals received by the two-signal receiving unit-as claimed in claim 14.